

ABSTRACT

A delay unit 101 delays a received known symbol input into an AFC section by one symbol; a subtracter 102 subtracts the one-symbol delayed received known symbol from the received symbol; a delay unit 103 delays the input one-symbol delayed received known symbol by one symbol; a subtracter 104 subtracts two-symbol delayed received known symbol from the received symbol; phase detecting sections 105, 106 severally convert the subtraction results to phase angles to detect phase shifts; subtracters 108, 109 severally perform the subtraction processing of phase offsets from the phase shifts, a multiplier 110 multiplies the output of the subtracter 109 by $1/2$; and an averaging section 111 averages the output of the subtracter 108 and the output of the multiplier 110 for an arbitrary interval.